

56 Joe's Dilemma



VIEW AND REFLECT

About 100 years ago, a French doctor named Antoine Marfan described the symptoms of a young patient. Today, those symptoms are recognized as a genetic disease known as the Marfan syndrome. A syndrome is a condition that causes a pattern of physical changes. The physical changes observed in the Marfan syndrome are a result of changes in the body's connective tissue.

Connective tissue provides the connections between tissues in the body. It is found in all your organs. For example, if you ever looked closely at uncooked chicken, you may have noticed the connective tissue that attaches the skin to the muscle of the chicken.

Today, genetic counselors advise people who suspect they may have a genetic condition. If one member of this couple has the Marfan syndrome, what are the chances that any child they have will have the Marfan syndrome?



Would you want to find out if you could have a genetic disease? Why or why not?



PROCEDURE

1. In your science notebook, list five diseases that can be “caught” from another person and five diseases that are inherited.
2. Read the e-mail below from Joe to his friend Megan.
3. Make a table in your science notebook to record the advantages and disadvantages of being tested, based on what you know so far about the Marfan syndrome. Leave room to add more rows to your table later.
4. Prepare a list in your science notebook of the questions you think Joe should ask Dr. Foster before he decides whether to be tested.
5. In order to prepare to watch the story on the video, first read Analysis Questions 1–4.
6. Find out more about the Marfan syndrome by watching the video “How Do Your Genes Fit?” Look for answers to Analysis Questions 1–4 and to your own questions from Step 4 as you watch the video.

To: meganR@talk.com

From: joeF@email.com

Hey Megan—

I'm trying to act cheerful because Dad says you feel the way you act, but I'm feeling kind of down. I miss my mom. It's been exactly three years since she died of that strange heart condition. The doctor didn't even know about the condition until she died.

Now Dr. Foster is saying he thinks it might have been genetic, and that means I could have inherited it. He went to a medical convention where he learned more about a condition called the Marfan syndrome. He began to suspect it caused Mom's heart problem. Now Dr. Foster's saying I should be tested even though I'm totally healthy. He says the test will tell if I inherited this Marfan gene from my mom.

He says some of the symptoms of this syndrome are being very tall and having a long face and loose joints. I'm tall and have a long face, like my mom, but I'm not double-jointed as she was. She could bend her fingers in the strangest positions—my sister and I always thought it was so cool!


They say there's a way to tell if I've got the gene my mom had, but it's complicated. Lots of our relatives would have to give blood to be tested too. Dad doesn't want me to have the test. He doesn't know if our health insurance will cover the costs. He says that doctors are making too much of a fuss about genetic diseases, and says we're better off just taking what comes and not knowing too much. Then he says if I have the gene, we might lose my health insurance and people will find out and won't hire me when I'm older.

But I keep thinking about some things Dr. Foster told me. He told me about a volleyball player named Flo Hyman who was in great shape, but then died suddenly in the middle of a game because she had this Marfan syndrome. Then I saw in the newspaper they think that the guy who wrote the musical Rent might also have had it. Dr. F. says if I know, I can be careful and maybe have surgery to prevent heart problems. But what if I had to give up playing soccer?

I sure wish your mom hadn't gotten that new job and moved you halfway across the state. What do you think I should do? Should I talk Dad into letting me have the test? Or should I try to forget the whole thing?

*Miss ya,
Joe*

ANALYSIS

1. What are the signs that suggest a person may have the Marfan syndrome?
2. What causes the Marfan syndrome?
-  3. Can you “catch” the Marfan syndrome from another person, the way you can catch the flu? Explain.
4. What effect can the Marfan syndrome have on a person's life?
5. Look back at the questions you wrote in your science notebook for Step 4 of the Procedure.
 - a. Were any of your questions answered? Record the new information you learned from the video.
 - b. What new questions would you want to ask a doctor or genetic counselor?

6. Copy the lists of words shown below:

List 1

hair dyed blonde
PTC taster
suntan
environmental trait
blue eyes due to
contacts
long hair

List 2

cold
mononucleosis
genetic disease
athlete's foot
chicken pox
infectious disease

List 3

environmental
and genetic
arm span
height
natural eye color
skin color
susceptibility
to disease

- a. In each list, look for a relationship among the words. Cross out the word or phrase that does not belong.
 - b. In each list, circle the word or phrase that includes the others.
 - c. Explain how the word or phrase you circled is related to the other words on the list.
7. **Reflection:** How would you behave toward a fellow student whom everyone suspects has the Marfan syndrome?



EXTENSION

Go to the *Issues and Life Science* page of the SEPUP website for links to websites on the Marfan syndrome and other genetic conditions.